2.   About the 2015 TIGER/Line Shapefiles

2.1 What is in the 2015 TIGER/Line Shapefiles

The 2015 TIGER/Line Shapefiles contain current geography for the United States, the District of Columbia, Puerto Rico, and the Island areas. Current geography in the 2015 TIGER/Line Shapefiles generally reflects the boundaries of governmental units in effect as of January 1, 2015, and other legal and statistical area boundaries that have been adjusted and/or corrected since the 2010 Census. This vintage includes boundaries of governmental units that match the data from the surveys that use 2015 geography, such as the 2015 Population Estimates and the 2015 American Community Survey.

The 2015 TIGER/Line Shapefiles contain the geographic extent and boundaries of both legal and statistical entities. A legal entity is a geographic entity whose boundaries, name, origin, and area description result from charters, laws, treaties, or other administrative or governmental action. A statistical entity is any geographic entity or combination of entities identified and defined solely for the tabulation and presentation of data. Statistical entity boundaries are not legally defined and the entities have no governmental standing.

In addition to geographic boundaries, the 2015 TIGER/Line Shapefiles also include geographic feature shapefiles and relationship files. Feature shapefiles represents the point, line and polygon features in the MAF/TIGER database, like roads and rivers. Relationship files are database files that contain additional attribute information that can be joined to the shapefiles. In this release, both the feature shapefiles and relationship files reflect updates made in the database through May 2015.

To see how the geographic entities relate to one another, please see our geographic hierarchy diagrams here:
http://www.census.gov/geo/reference/hierarchy.html.

The legal entities included in these shapefiles are:

American Indian off-reservation trust lands
American Indian reservations (both federally and state-recognized)
American Indian tribal subdivisions (within legal American Indian areas)
Alaska Native Regional Corporations
Congressional districts – 114th Congress
Consolidated cities
Counties and equivalent entities (except census areas in Alaska)
Estates (U.S. Virgin Islands only)
Hawaiian home lands
Incorporated places
Minor civil divisions (MCDs, such as towns and townships in the Northeast and Midwest)
School districts (elementary, secondary, and unified)
States and equivalent entities
State legislative districts (upper and lower chambers)
Subbarrios (Subminor civil divisions) (Puerto Rico only)

The statistical entities included in these shapefiles are:

Alaska Native village statistical areas
American Indian/Alaska Native statistical areas

American Indian tribal subdivisions (within Oklahoma tribal statistical areas)
Block groups
Census areas (statistical county equivalents in Alaska)
Census blocks
Census county divisions (CCDs), census subareas (in Alaska), and unorganized territories (statistical county subdivisions)
Census designated places (CDPs)
Census tracts
Combined New England city and town areas
Combined statistical areas
Metropolitan and micropolitan statistical areas and related statistical areas
Metropolitan divisions
New England city and town areas
New England city and town area divisions
Oklahoma tribal statistical areas
Public use microdata areas (PUMAs)
State designated tribal statistical areas
Tribal designated statistical areas
Urban areas
ZIP Code tabulation areas (ZCTAs)

The feature shapefiles and relationship files are:

Address range-feature
Address range-feature name relationship file
Address ranges
All lines (called Edges)
All roads
Area hydrography
Area landmark
Coastline
Feature names relationship file
Linear hydrography
Point landmark
Primary and secondary roads
Primary roads
Topological faces (polygons with all geocodes)
Topological faces – area landmark relationship file
Topological faces – area hydrography relationship file
Topological faces – military installations relationship file

For the 2015 TIGER/Line Shapefiles, the geographic entities and features available in nation-, state-, or county-based files can be found in Table 1.

Table 1: 2015 Shapefile availability

Layer	Nation-Based File	State-Based File	County-Based File
Address Range-Feature			X
Alaska Native Regional Corporation		X	
All Lines (Edges)			X
All Roads			X
American Indian Tribal Subdivision	X		
American Indian/Alaska Native/Native Hawaiian Areas	X		
Area Hydrography			X
Area Landmark		X	
Block		X	
Block Group		X	
Census Tract		X	
Coastline	X		
Combined New England City and Town Area	X		
Combined Statistical Area	X		
Congressional District – 114th Congress	X		
Consolidated City		X	
Core Based Statistical Areas	X		
County and Equivalent	X		
County Subdivision		X	
Elementary School District		X	
Estates		X	
Linear Hydrography			X
Metropolitan Divisions	X		
Military Installation	X		
New England City and Town Area	X		
New England City and Town Division	X		
Place		X	
Point Landmark		X	
Primary and Secondary Roads		X	
Primary Roads	X		
Public Use Microdata Area		X	
Rails	X		
Secondary School District		X	
State and Equivalent	X		
State Legislative District – Lower Chamber		X	
State Legislative District – Upper Chamber		X	
Subbarrio		X	
Topological Faces (Polygons with All Geocodes)			X
Tribal Block Group	X		
Tribal Census Tract	X		
Unified School District		X	
Urban Areas	X		
ZIP Code Tabulation Area	X		

For the 2015 TIGER/Line Shapefiles, the relationship files available in nation-, state-, or county-based files can be found in Table 2.

Table 2: 2015 Relationship file availability

Layer	Nation-Based File	State-Based File	County-Based File
Address Range-Feature Name			X
Address Ranges			X
Feature Names			X
Topological Faces – Area Landmark		X	
Topological Faces – Area Hydrography			X
Topological Faces – Military Installations	X		

2.2 Structure and Format

2.2.1 Structure

The 2015 TIGER/Line Shapefiles and associated relationship files are offered in a compressed format. One zipped file is available for each layer, with a file extension of .zip. Each zipped shapefile consists of the following seven files:

- .shp – the feature geometry
- .shx – the index of the feature geometry
- .dbf – the tabular attribute information
- .prj – the coordinate system information
- .shp.xml – the Federal Geographic Data Committee (FGDC) metadata
- .shp.iso.xml - the International Organization for Standardization (ISO 191) metadata
- .shp.ea.iso.xml - the ISO 191 (entity and attribute) metadata

Each zipped relationship file consists of the following four files:

- .dbf – the tabular attribute information
- .dbf.xml – the Federal Geographic Data Committee (FGDC) metadata
- .dbf.iso.xml - the International Organization for Standardization (ISO 191) metadata
- .dbf.ea.iso.xml - the ISO 191 (entity and attribute) metadata

2.2.2 File Naming Conventions

The name of each file is:

tl_2015_<extent>_<layer>.<ext>

Where:

tl = TIGER/Line
2015 = the version of the files

<extent> = parent geography entity ID code (variable length of two to five characters)
The entity ID code identifies the geographic extent by specific entity for which the file contains data. It is of variable length depending on the type of file:

Nation-based: 2-character abbreviation – "us"
State-based: 2-character numeric state FIPS code
County-based: 5-character numeric county FIPS code

<layer> = layer tag of variable length
The layer tag specifies the type of geography or feature the file contains.

<ext> = the file extension

Examples:

Nation-based shapefile: County and Equivalent shapefile
    File Name: tl_2015_us_county.shp

State-based shapefile: State and Equivalent shapefile for Maryland
    File Name: tl_2015_24_state.shp

County-based shapefile: All Lines shapefile for Cayuga County, New York
    File Name: tl_2015_36011_edges.shp

2.2.3 Datum (GCS NAD 83)

Each shapefile contains a .prj file that contains the GIS industry standard well-known text (WKT) format to describe the coordinate system/projection/datum information for each shapefile. All Census Bureau generated shapefiles are in Global Coordinate System North American Datum of 1983 (GCS NAD83). Each .prj file contains the following:

GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6 378137,298.257222101]],PRIMEM["Greenwich",0],UNIT["Degree",0.017453292519943295]]

2.2.4 Metadata

Metadata are organized data files used to capture the basic descriptive characteristics about the data. For example, metadata will describe the quality, purpose, spatial extent, and history of a particular dataset. The metadata files are compatible with a text editor, web browser, or Esri's ArcCatalog. The TIGER/Line Shapefiles metadata provide a detailed description of the TIGER/Line Shapefiles and relationship files. This includes publication date, contact information, and all of the valid attribute values and descriptions. Users should refer to the metadata files for extensive documentation about the contents of the shapefiles and relationship files. The All Lines metadata also contains a Spatial Metadata Identifier (SMID), which identifies the source of the coordinates for each edge and the horizontal spatial accuracy information for a particular line. Please note that the horizontal spatial accuracy refers only to those edges identified as matched to the source with that accuracy. It is not the spatial accuracy of the All Lines shapefile as a whole. For more information regarding the All Lines Shapefile, please refer to Section 3.12, Linear Features.

Metadata are provided in two formats for each shapefile and relationship file in Extensible Markup Language (XML) format.

- Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM)*
    - shp.xml
    - dbf.xml
- International Organization for Standardization (ISO 191) Content Standard for Digital Geospatial Metadata
    - .shp.iso.xml and .shp.ea.iso.xml
    - .dbf.iso.xml and .dbf.ea.iso.xml

* Please note that in order to see all of the metadata element values, the FGDC CSDGM stylesheet must be specified when using Esri's ArcCatalog.

2.2.5 Spatial Accuracy of Linear Features

In order to maintain a current geographic database from which to extract the TIGER/Line Shapefiles, the Census Bureau uses various internal and external processes to update the MAF/TIGER database. While it has made a reasonable and systematic attempt to gather the most recent information available about the features each file portrays, the Census Bureau cautions users that the files are no more complete than the source documents used in their compilation, the vintage of those source documents, and the translation of the information on those source documents.

2.2.6 Coordinates

Coordinates in the TIGER/Line Shapefiles have six decimal places, but the positional accuracy of these coordinates may not be as great as the six decimal places suggest. The spatial accuracy varies with the source materials used. The Census Bureau cannot specify the spatial accuracy of features changed or added by its field staff or through local updates, features derived from the GBF/DIME Files (TIGER's predecessor in 1970 and 1980), or other map or digital sources. Thus, the level of spatial accuracy in the TIGER/Line Shapefiles makes them unsuitable for high-precision measurement applications such as engineering problems, property transfers, or other uses that might require highly accurate measurements of the earth's surface. No warranty, expressed or implied, is made with regard to the accuracy of these data, and no liability is assumed by the U.S. Government in general or the Census Bureau specifically, as to the spatial or attributes accuracy of the data.

2.2.7 Codes for Geographic Entities

The 2015 TIGER/Line Shapefiles include the American National Standards Institute (ANSI) codes to identify both legal and statistical entities. The ANSI codes are a standardized set of numeric or alphabetic codes issued by the American National Standards Institute (ANSI) to ensure uniform identification of geographic entities through all federal government agencies.

The ANSI publications include both the Federal Information Processing Series (FIPS) codes and the United States Geological Survey's Geographic Names Information System (GNIS) codes. The FIPS codes appear in the 2015 TIGER/Line Shapefiles in fields such as "STATEFP", where "FP" indicates that the field contains a FIPS code. The GNIS codes are a permanent numeric identifier of up to eight digits. The GNIS codes appear in fields such as "STATENS", where "NS" (National Standard) indicates that the field contains a GNIS code. The Census Bureau stores the GNIS code as a fixed-width string; the official code is a numeric value without leading zeroes. The GNIS code is available beginning in the 2010 TIGER/Line Shapefiles. For geographic entities not covered by ANSI, the Census Bureau assigns a code and these appear in fields such as "TRACTCE", where "CE" stands for Census. Finally, state-submitted codes end in "ST", such as "SLDLST", and local education agency codes end in "LEA", as in "ELSDLEA".

For more information about ANSI codes, please visit:
http://www.census.gov/geo/reference/ansi.html.

2.3 File Changes and Updates for the 2015 TIGER/Line Shapefiles

2.3.1 List of files

The 2015 TIGER/Line Shapefiles includes the following updates:

- The following shapefiles may have boundary updates:
    - County and equivalents
    - Places
    - County subdivisions

2.3.2 Boundary Changes

Most of the boundaries of federally recognized American Indian Reservations and off-reservation trust lands, tribal subdivisions, states and equivalent entities, counties and equivalent entities, minor civil divisions (MCDs), consolidated cities, and incorporated places generally are those that were legally in effect as of January 1, 2015. The Boundary and Annexation Survey (BAS) collects boundaries of legal areas.

For more information about the BAS, please visit:
http://www.census.gov/geo/partnerships/bas.html.

For more information about specific boundary changes, please visit:
http://www.census.gov/geo/partnerships/bas/bas_newannex.html.

For nearly all statistical areas, the boundaries shown are those in effect at the time of the 2010 Census. However, there are a few exceptions. Current geography may differ from 2010 Census geography due to feature updates that cause boundary shifts. For example, if a street feature that acts as a census tract boundary is moved, then the census tract boundary will move as well. In addition, census tract boundaries may change to maintain comparability with related geographies, such as incorporated places. If a census tract boundary is based on an incorporated place boundary, and the place boundary changes, the census tract boundary may change if the population affected in the census tract is low. Census designated places (CDPs) may also change throughout the decade. As time permits, new CDPs are added to our database. In addition, because unorganized territories and CDPs occupy the same level of geography as legal MCDs and incorporated places, updates to the legal boundaries may affect the current boundaries for some of these entities, including the elimination of some of the statistical entities.